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THE UNIVERSITY OF ALBERTA

CONSTRUCT VALIDITY OF THE PERSONAL RESPONSE QUESTIONNAIRE FOR TRANSACTIONAL ANALYSIS

by

© LYNN EVERETT KEALY

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "Construct Validity of the Personal Response Questionnaire for Transactional Analysis" submitted by Lynn Everett Kealy in partial fulfilment of the requirements for the degree of Doctor of Philosophy.

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ABSTRACT

The object of the research was to develop the Personal Response Questionnaire designed to measure and identify ego states as defined by Transactional Analysis. The model of test development used was that of Loevinger (1957). The evolution of the concept of ego was briefly reviewed historically from its root in psychoanalysis to its use in Transactional Analysis today.

While much theorizing has been done in TA, the theory has not been sufficiently supported by research. One of the reasons for the lack of research may be that an adequate psychometric instrument was not available to measure and identify ego states.

TA theory was outlined and the problem of developing the Personal Response Questionnaire (PRQ) was specifically defined. Hypotheses regarding the factor structure of the PRQ were made, as were hypotheses regarding the relationships of PRQ scales to other personality variables measured by the California Psychological Inventory (C.P.I.). Social desirability was also considered as measured by the Marlowe-Crowne Social Desirability Scale (MCSDS) in order to estimate shared variance with PRQ scales.

The steps in the development of the PRQ were outlined using Loevinger's model. The substantive component of construct validity consisted of the development of an item pool and the rating of the items by judges, resulting in the first draft of the PRQ.

The structural component consisted of administering the first draft of the PRQ and the MCSDS to 508 undergraduate university students. The results of the PRQ were factor analyzed using Hotelling's iterative principal factor method rotated to a Varimax criterion. The Varimax factor matrix was then targeted to a Procrustes solution. A second

order factor analysis was then performed on the first order factors. Internal consistency of the PRQ scales was estimated.

The external component of construct validity consisted of administering the final draft of the PRQ with the California Psychological Inventory to 139 undergraduate university students and examining the resulting correlations. Internal consistency was estimated.

All hypotheses were then examined and the results supported the PRQ as being a viable psychometric instrument. It would appear that it is better for use with females than males at this time, until more evidence of the external component of validity is gathered for males.

The concept of ego state as defined by Transactional Analysis was solidly supported as being a useful and experimentally verifiable concept.

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CHAPTER I

INTRODUCTION

Overview of Problem

The purpose of this research is to develop systematically a psychometric instrument, the Personal Response Questionnaire, to identify and measure the relative strength of the ego states that are integral to Transactional Analysis (TA) theory. The model of test development followed will be that of Loevinger (1957) where the construct validity of the test implies not only test analysis but also the process of the construction of the test. She states that the construct validity of a test has three aspects or components: (1) the substantive component, somewhat similar to what was previously called content validity, (2) the structural component, concerned with homogeneity and functional unity, and (3) the external component, including relations to non-test behavior, factorial patterns, and relations to other tests. "None of these steps in test construction is optional, and none is without consequence for the validity of the test in use (p.654)."

The development of the PRQ is seen by the author as being important for the following reasons. TA is becoming increasingly popular for use outside the area of psychotherapy. It is expanding with fervor akin to that of a religious movement. In fact, one of the main organizations using TA is various church groups. It is also being used with businessmen, teachers, school children, marriage enrichment groups, and dental

hygienists, to name only a few. All Air Canada employees across Canada who are in contact with the public have had exposure to TA.

TA is probably the most rapidly expanding theory, in terms of increased use, in North American psychology today. And yet, very little experimental work has been done using the theory of TA. Two possible reasons for this may be that (1) until recently, most people using TA have been clinicians, and (2) there has not been an adequate research tool developed that will identify and measure the relative strength of the ego states defined by TA theory.

As evidenced by the increasing popularity of TA, one of its main goals appears to be on the way of being realized, namely, that it provides and encourages the use of words that are simple and direct instead of scientific or psychological, and provides a way of looking at human behavior that most people can understand and put to use. James and Jongeward (1971) state that "Its principles can be applied on the job, in the home, in the classroom, in the neighborhood - wherever people deal with people (p.12)."

According to TA, each person has three ego states which are separate and distinct sources of behavior. The Parent (P) ego state contains the attitudes and behavior incorporated from external sources in the form of authority figures. The Adult (A) ego state is oriented toward assessing reality and processing information. The Child (C) ego state contains recordings of early experiences, responses and reactions to them, and impulses natural to the infant. These three ego states are available to each person and are manifest by responses to specific stimuli.

It is hoped that this research will not only encourage people to take TA more seriously, but that it will provide an empirical base for TA that will facilitate others in building upon it and pursuing some of it's hidden implications.

Background to the Development of TA

One of the issues to be considered is whether TA is worth while investigating. The author proposes to show that, while TA is relatively new, it's roots are solidly planted in well recognized theoretical and empirical grounds.

The concept of ego was extensively developed by Freud and "Since 1923 all of psychoanalysis has been ego psychology (Corsini, 1973, p.4)." Since then, many theoreticians and clinicians have contributed to the development of the concept of the ego, but most consist of a reformulation of Freud's ideas.

Freud saw personality structure as consisting of three major components - id, ego, and superego - interacting in a dynamic tension and balance. Millon (1969) defined Freud's ego as the component that is geared to reality adaptations. "These processes - judgment, memory, knowledge, anticipation and the unconscious mechanisms of defense - controlled the instinctual drives of the id and directed their expression within the boundaries of practical reality (p.22)." For Freud, the ego is at least partly unconscious, this part consisting largely of the defense mechanisms.

The ego is the conscious mind according to Jung (1953b). The ego directs the business of everyday living and is comprised of conscious perceptions, thoughts, memories and feelings. One's identity and a

feeling of continuity is gained through complex combinations of conscious thoughts, feelings and actions.

So far, the ego is thought of as being one of the core characteristics of the personality. Federn (1952) "recognized that the ego is an actual continuous mental experience, and not merely a mental abstraction (p.6)." The ego experience passes from one state to another, but is felt as being continuous. Weiss (Federn, 1952) claims that Federn's definition of the ego was misunderstood, and he attempts to clarify it as follows - "Federn describes the ego as an experience, as the sensation of knowledge of the individual of the lasting or recurrent continuity, in time, space, and causality, of his bodily and mental life. This continuity is felt and apprehended as unity (p.8)." An important concept for Federn is that of the ego boundary which is a dynamic dividing plane between inner and external reality. "The specific contents which are at any given time included within the ego boundary determine the specific ego state. Different ego boundaries are correlated with different ego stages (p.14)." Federn claims that it can be experimentally proven that ego states can often be awakened through hypnosis, although some are more easily recalled than others.

Weiss (1950) points out that ego states of former age levels are still part of the personality. He identifies residual ego states that resemble those of a child as well as those of one's parents. These ego states are in addition to one's present form of existence as an adult, and are available for replay. Psychoanalytic treatment was the process of helping the person become aware of these various ego states.

Up to this point, ego states remained exclusively within the realm

of psychoanalysis. However, Penfield (1952), a neurosurgeon working with patients suffering from focal epilepsy, offered some neuro-psychological support for Weiss's and Federn's theoretical concepts. He discovered that he could force recollections clearly derived from the patient's memory by touching the temporal cortex of the brain with a weak electrical current. He observed that this psychical experience stopped when electrical stimulation was withdrawn, and repeated itself when stimulation was reapplied. Penfield noted that this stimulation evoked a single recollection and not a mixture.' Harris (1967) stated that, "Perhaps the most significant discovery was that not only past events are recorded in detail but also the feelings that were associated with those events. An event and the feeling which was produced by the event are inextricably locked together in the brain so that one cannot be evoked without the other (p.27)."

Penfield stated that it seems that every experience is inextricably ingrained in our memory and is available for recall. The evoking of these complicated memory sequences would lend some support for believing that each memory has its own separate neurone pathway.

Kubie (Penfield, 1952) commented on these experiments and said that recall is essentially total and is far more than can be consciously recaptured. Kubie's implication is that the events can be experienced simultaneously as being in the past and in the present.

Chandler and Hartman (1960) using LSD-25 reported the simultaneous experiencing of two ego states, one oriented toward current reality, and the other a reliving of experiences as far back as the first year of life. The person actually appears to relive the experience, feeling

the same emotions and being aware of the same situation.

There certainly appears, then, to be physiological evidence to support the construct of ego state. Memory of all past experience does appear to be stored in the brain, and these past experiences seem to have a very real effect on present behavior. The more these past experiences have been activated or relived, the more readily they are available for elicitation in the present. The evidence produced by these neuropsychological and biological studies supports and aids in explaining the observable evidence in human behavior.

Thus, from Freud up to more recent times, the concept of ego has seen considerable evolution. It was initially seen as a part of the personality, and more recently is considered by some to be an ongoing experience based on real situations and a related set of behavior patterns. Eric Berne, the founder of Transactional Analysis, has used the groundwork of ego states by Penfield and Federn and extended it to the clinic where he attempts to lay previous conceptions aside and base his work solely on clinical observation and experience with patients. It is Berne's more comprehensive conceptualization of ego state that will be used in this study.

CHAPTER II

THEORY AND RELATED LITERATURE

Introduction

There are differences of opinion among the various TA theorists as to the composition of the ego states as well as different ways of subdividing them. Steiner (1974) is particularly radical in his recent writings where he appears to be putting the Critical Parent into the Child ego state.

The author, therefore, wishes to clarify that this research is based upon TA theory as described by Berne (1961, 1964, 1972) and elaborated on by Harris (1967), James and Jongeward (1971), and Steiner (1971). While some differences do exist, the authors appear to complement one another in seeking a deeper understanding of inter- and intra-personal relationships. Where there are differences, the definitions of Berne are followed.

Transactional Analysis Theory

(a) Structural Analysis and Ego States

Steiner (1971) said that the concept of ego state is the block upon which Transactional Analysis builds. Berne (1961) defined ego state as follows, "An ego state may be described phenomenologically as a coherent system of feelings related to a given subject, and operationally as a set of coherent behavior patterns; or pragmatically, as a system of feelings which motivates a related set of behavior patterns (p.xviii)."

Structural analysis consists of defining and analyzing the various ego states people use in communication. The theoretical basis for structural analysis is composed of three pragmatic absolutes and three general hypotheses. The pragmatic absolutes are:

1. That every grown-up individual was once a child.
2. That every human being with sufficient functioning brain-tissue is potentially capable of adequate reality testing.
3. That every individual who survives into adult life has had either functioning parents or someone in loco parentis.

The corresponding hypotheses are:

1. That relics of childhood survive into later life as complete ego states.
2. That reality-testing is a function of discrete ego states and not an isolated "capacity".
3. That the executive may be taken over by the complete ego state of an outside individual, as perceived (Berne, 1961, p.17).

Berne (1964) states that each person has a limited repertoire of these ego states. He also makes clear that ego states are not roles, but are phenomenological realities. He conceives of this repertoire as falling into three main categories - (1) Parent (P) - the incorporation of attitudes, opinions, and behaviors of emotionally significant adults in the child's youth, (2) Adult (A) - ego states directed toward the appraisal of objective reality, and (3) Child (C) -

still active ego states that became fixated as a child.

Because of this trichotomy, and because of Berne's origin in psychoanalysis, a comparison of psychoanalysis and TA is sometimes made. However, Berne was well able to point out the differences. While a comparison of the two theories is beyond the scope of this paper, a brief comparison of the id and the Child may be instructive in demonstrating that psychoanalytic concepts and TA constructs are distinct from each other.

Freud (1933) described the id as "a chaos, a cauldron of seething excitement...it has no organization and no unified will...the laws of logic...do not hold for processes in the id. There is nothing in the id which can be compared to negation (p.104)." Berne clarifies the difference by stating that the Child ego state reproduces the ego state of the actual child. The child knows good and evil, and he also has organization, unified will, logic, and negation.

A basic premise of TA is that people function in social situations in a Parent, Adult, or Child ego state and that they will shift from one ego state to another, depending on the situation. A simplified structural diagram of the complete personality is shown in Figure 1.

The Parent ego state can be subdivided into the Critical Parent (CP) and the Nurturing Parent (NP). The Critical Parent consists of standards of behavior based on unexamined information rather than on fact. It is basically composed of laws, rules and prohibitions i.e. about religion, politics, etc. The Nurturing Parent is more sympathetic and protective, but can also be critical and moralizing. However, the reasons for these behaviors are usually based on the assumption that

Simplified diagram of personality

Figure 1

this person knows what is good for others and is intent on caring for them.

James and Jongeward (1971) described the Adult ego state as that it "...can be used to reason, to evaluate stimuli, to gather technical information, and to store this information for future reference (p.224)." The Adult examines previous data to determine whether it is still relevant. It also examines feelings, deciding whether or not they are appropriate, and whether or not to allow them to surface.

The Child ego state is made up of the way the child experienced his own impulses, the way he experienced and felt about the world, and the way he adapted to it (James & Jongeward, 1971). The Child ego state is subdivided into three parts - Adaptive Child (AC), Rebellious Child (RC), and Natural Child (NC). Adaptive Child behavior is usually that of being very cooperative and compliant. This person has also discovered ways of manipulating people to satisfy his own needs or wants. The

Rebellious Child behavior is usually rebellion against some form of authority. This rebellion may take the form, for example, of anger, boredom, sarcasm. He is openly assertive and self-indulgent (Hurley & Porter, 1967). The Natural Child behavior is free, uninhibited and impulsive. Creativity resides here, as do curiosity, the desire to explore and know, and the urges to touch, feel and experience.

One of the goals of TA is to provide an easily learned framework with a simple vocabulary that will allow the professional and the layman to communicate about and deal with very complex phenomena. Harris (1967) has detailed some of the physical actions and verbal statements that are behavioral clues of certain ego states. A few of these are listed below as examples:

Parent clues - Physical: furrowed brow, pointing finger, hands on hips. Verbal: "I'm going to put a stop to this once and for all." Always, never, shocking, disgusting.

Adult clues - Physical: listening with head tilted, Attention shown by movements of face, eyes, body. Verbal: why, what, where, when, how much, it is my opinion.

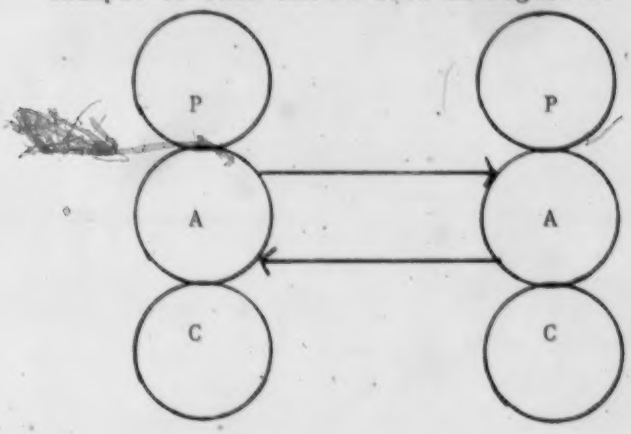
Child clues - Physical: tears, pouting, whining, teasing, giggling, laughter, nail-biting. Verbal: I wish, I want, I dunno, I don't care, I guess.

(b) Transactional Analysis

Harris (1967) stated that "One of the reasons for the criticism that the psychotherapeutic sciences are unscientific, and for much of the disagreement in this field, is that there has been no basic unit for study and observation (p.33)." Berne (1964), the originator of TA,

defined this basic unit as follows - "The unit of social intercourse is called a transaction. If two or more people encounter each other in a social aggregation, sooner or later one of them will speak, or give some indication of acknowledging the presence of the others. This is the transactional stimulus. Another person will then say or do something which is in some way related to the stimulus, and that is called the transactional response (p.33)." Transactional analysis is concerned with diagnosing which ego state initiated the transaction, and which ego state responded.

There are three main types of transactions as defined by Berne (1972). The complementary transaction is one in which the stimulus and response form parallel lines in a P-A-C transactional diagram. An example of this can be seen in Figure 2. In this example, information



Husband: What time is it?

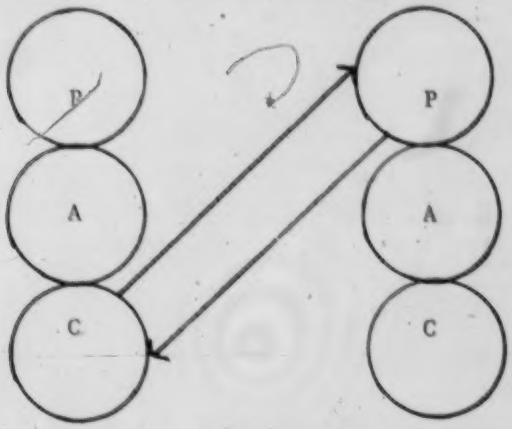
Wife: It's two o'clock.

Complimentary Transaction A - A

Figure 2

is asked for, and given in a very objective manner. Communication may continue. Berne (1964) defines a complimentary transaction as one which is "appropriate and expected and follows the natural order of healthy human relationships (p.29)." Communication lines remain open

and people can continue communicating. Complimentary transactions can take place between any two ego states, e.g. P-P, P-A, P-C, A-A, A-C, or C-C. As long as transactions are complimentary, communication can proceed smoothly and indefinitely.



Husband (whining voice): I don't feel very well.

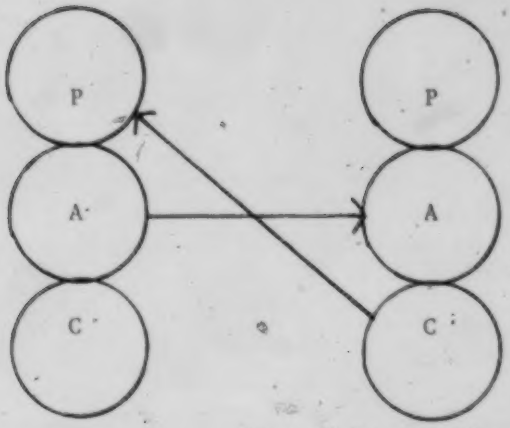
Wife: You just stay there and rest. I'll bring you some orange juice.

Complimentary transaction C - P

Figure 3

Figure 3 illustrates another type of complementary transaction (C-P). Here the Child in the husband expresses his feelings of illness. The nurturing part of his wife's Parent comes to his rescue and takes care of him.

A crossed transaction is one in which the lines of communication are not parallel. Communication is broken off when an inappropriate ego state is activated. One person initiates a transaction, expects a certain response, but does not get it. An example of a crossed transaction is seen in Figure 4. Here, the Adult asks a straightforward question, but the defensive Child responds and communication is broken. A great deal of pain and confusion results from a crossed transaction. Crossed transactions can occur between any combination of ego states and results in discontinued communication.



Husband: Honey, where did you put my shoes?

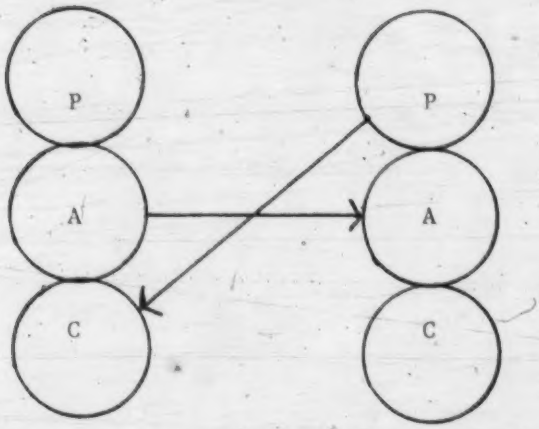
Wife: You're always blaming me!

Crossed Transaction C - P

Figure 4

Figure 5 is an example of another crossed transaction (P to C type). The son, in a very Adult manner, gives his father specific information. The father responds Parentally in a very critical and reprimanding manner.

Ulterior transactions involve the activity of more than two ego states simultaneously. There are two kinds of ulterior transactions. Figure 6 represents an angular transaction in which an ostensibly A-A communication may be designed to trigger the C in the respondent. This is a technique often used by Salesmen. The social level of the communication is directed to the A of the customer who might reply in the A. However the ulterior or psychological level is directed by the salesman's A to the customer's C. A duplex transaction is commonly seen in flirtation and diagrammatically is represented in Figure 7. The social level is A communication about etchings, but the psychological level is C communication regarding sex play.

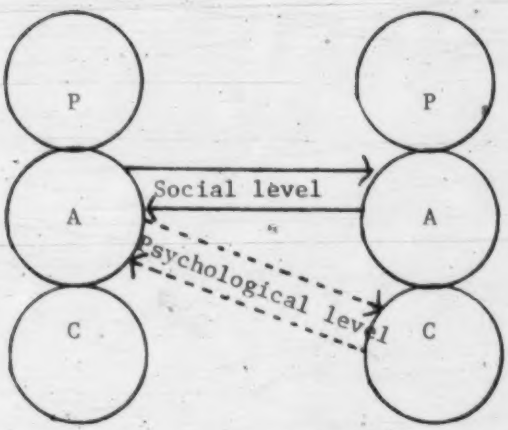


Son: I have an assignment to hand in first thing tomorrow.

Father: Why do you always leave things to the last minute?

Crossed Transaction P - C

Figure 5

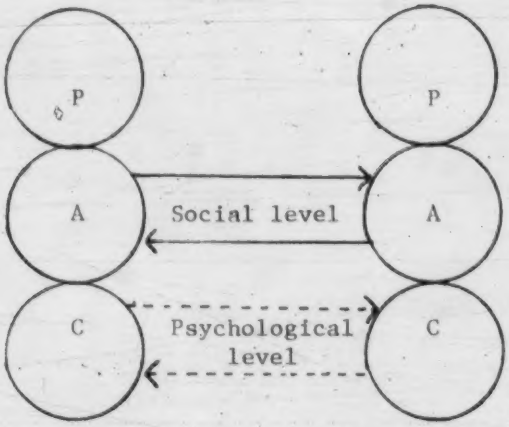


Salesman: This one is better, but you probably can't afford it.

Customer: I'll take it.

Angular Transaction

Figure 6



Man: Would you like to come up and see my etchings?

Woman: Yes! I just love etchings.

Duplex Transaction

Figure 7

Definition of Problem

While there have been many books and journal articles published on transactional analysis, most of them have been theoretical in nature. The concepts of TA have been observed clinically, but few attempts have been made to verify them empirically. One of the reasons why research has been so sparse in the area is that most people involved in TA are clinicians. Another important reason may be that, to date, there is no adequate measurement instrument available to identify and measure the relative strength of these ego states as they exist in individuals.

McCarley (1971) developed the Ego State Inventory which is made up of a series of cartoons depicting people interacting in various social situations. In each cartoon, a stimulus person comments or asks a question from the Adult ego state. The subject has five choices from which to make a response, each choice representing either the Punitive (Critical) Parent, Nurturing Parent, Adult, Adaptive Child or Rebellious Child. McCarley did a construct validation study correlating the ESI with

dogmatism and irrational ideas. He also used the California Psychological Inventory to determine the relation of ESI scores to other personality variables. The results generally indicated that ego state is a viable concept and that it can be measured by objective means, but that the ESI appears to need considerable revision before it would be a useful instrument.

Thomson (1972) developed an instrument which consisted of brief selections, derived from several group therapy sessions, illustrative of the three ego states (P, A, and C). These were recorded on an audio tape and administered to normal subjects, as well as separate groups of psychiatric patients diagnosed as depressive or character disorder, which included drug users and alcoholics. Thomson claimed to support Berne's contention that ego states are identifiable phenomena. He found that transactional analysis experts, naive normal, and naive psychiatric subjects could all identify ego states with a high degree of accuracy, once the concept of ego states was explained to them and defined. Thomson states that further research should not only include the P, A, and C ego states, but all the subtypes as well.

Coffman (1972) developed the PAC Scale, however, very little information is available on it. In a form letter, he quoted average scores on Parent, Adult, and Child for (a) engineers of a major auto company, (b) bank executives, (c) secretaries, and (d) trainer trainees for a large utility. He also stated that the reliability for each scale is above .7 (Kuder-Richardson and Hoyt) but failed to give exact figures. Coffman said that the correlation between each two of the scales is below $\pm$.39. Also stated was that "A comparison of the

responses of high scoring and low scoring groups to each item on each Scale indicates that the Scales do measure the particular ego state usage." This test includes only the Parent, Adult, and Child ego states. While he does seem to have some content validity, as he used the jury technique to obtain the initial items, there is no indication that there is construct validity for this test.

Weinlick (personal communication, 1974) found that McCarley's ESI did not discriminate change in ego state functioning after training in transactional analysis, but that Coffman's PAC Scale did. Hurley (1973) states that "Only hard and verifiable evidence will permit transactional analysis to move toward a more respected position within the scientific community (p.33)."

The object of this research is to develop systematically an instrument that will facilitate the identification and measurement of the presence or absence of these ego states. At the same time, the relationship of ego states to other psychological variables should lend additional credence to transactional analysis and broaden it's perspective.

Personal Response Questionnaire

The PRQ will be composed of a number of items, each representing behavior from one of the following ego states: CP, NP, A, AC, RC, and NC. The items are statements to which the respondent answers True or False as it pertains to him. From the Subject's responses on the answer sheet, it will be possible to obtain a score for each subject on each of the six ego states.

Hypotheses Regarding Factor Structure of the PRQ

It is thought that TA provides a plausible way of looking at human behavior. Thus it is hypothesized that a factor analysis should reveal the following factors:

1. Six first order factors will appear corresponding to the previous theoretically defined ego states of CP, NP, A, AC, RC, and NC.
2. Three second order factors will appear corresponding to the more broadly theoretically defined ego states of P, A, and C.

Discussion Regarding Factor Hypotheses and TA Theory

Certain problems are foreseen in regards to hypothesis #1 in terms of possible relationships between ego states. While the above hypotheses are based on theoretical definitions of ego states, different schools of TA subdivide ego states differently. For example, while Berne (1972) referred to the ego states in a similar manner to those elaborated above, James and Jongeward (1971) subdivided the Child into the Natural Child, the Little Professor, and the Adapted Child. Rebellious behavior referred above in the RC is included in the NC of James and Jongeward. The manipulative and intuitive aspects of the previously defined AC was included in their Little Professor. Harris (1967) does not subdivide Parent or Child and refers to three ego states of P, A, and C. Harris refers to prejudicial behavior as contamination of the A by unexamined P data, whereas prejudicial behavior is included here in the CP. Some kinds of rebellious behavior are referred to by Harris as Child contamination of the A, whereas here

it is called the RC.

In terms of the hypothesized factor structure of the PRQ, potential problems are foreseen mainly in regard to the C ego state. As mentioned above, the NC is behavior natural to the child, while the AC and RC behaviors are formed in response to authority figures, usually parents. Owing to the identical source in the formation of the AC and RC behaviors, there may be no distinction in factor structure even though the behaviors are distinctly different from one another.

Another potential problem may be in the similarity in some behavior between the CP and RC. While the behavior may be similar, the reasons for the behavior are very different in nature. For example, a person exhibiting RC behavior may react negatively to a colored boss, reacting to the position of authority and not to the color of his skin. A person exhibiting CP may react negatively to this person on the basis of the skin color and not the position of authority. Thus, it may prove difficult to distinguish between the behavior of CP and RC and the underlying reasons for the behavior may more adequately differentiate these ego states.

California Psychological Inventory

An instrument was needed to determine the relationship of the ego states measured by the PRQ to other personality variables. The California Psychological Inventory has been chosen because it has been called "one of the best, if not the best, available instrument of its kind (Buros, 1965, p.169)." It is a measure of social functioning in contrast to the clinical tone of many personality inventories, and as

such, would appear to measure personality variables that are somewhat similar to the PRQ.

The CPI is a highly researched test and the Manual is revised every three years. Megargee (1972) has devoted an entire book to the CPI dealing with it's development, construction and validation of the basic scales, conceptual analysis and interpretation, and it's possible application in assessment and research. Long-term coefficients of stability range from .41 to .85 with most in the .60s and .70s indicating moderate stability over one year for men and women. Data reported in the CPI Manual were analyzed by Megargee for internal consistency. KR-21 coefficients on high school boys and girls ranged from .22 to .94 indicating considerable variability in internal consistency. Validity data are extensive due to the vast amount of research done with this instrument. A large number of factor analytic studies have also been reported with the CPI.

Definitions of Scales and Factors About Which Hypotheses will be Made

Following are definitions of scales about which specific hypotheses will be made, with one exception. A CPI scale was not found that corresponded closely to the CP ego state. However, in an analysis of the results of factor analyses done on the CPI, Megargee defines five factors. His definition of people scoring low on Factor 3 (strong loadings from Ai and Fx, secondary loadings from To, Ie and occasionally from Py) appears to correspond closely to the CP ego state, and this factor will be used in the formulation of one hypothesis.

Sociability (Sy) - low scorers are defined as being awkward, conventional,

quiet, submissive, and unassuming; as being detached and passive in attitude; and as being suggestible and overly influenced by other's reactions and opinions.

Social Presence (Sp) - high scorers are defined as clever, enthusiastic, imaginative, quick, informal, spontaneous, and talkative; as being active and vigorous; and as having an expressive, ebullient nature.

Socialization (So) - low scorers are defined as defensive, demanding, opinionated, resentful, stubborn, headstrong, rebellious, and undependable; as being guileful and deceitful in dealing with others; and as given to excess, exhibition, and ostentation in their behavior.

Self-control (Sc) - low scorers are defined as impulsive, shrewd, excitable, irritable, self-centered, and uninhibited; as being aggressive and assertive; and as overemphasizing personal pleasure and self-gain.

Achievement via Independence (Ai) - high scorers are defined as mature, forceful, strong, dominant, demanding, and foresighted; as being independent and self-reliant; and as having superior intellectual ability and judgment.

Intellectual Efficiency (Ie) - high scorers are defined as efficient, clear-thinking, capable, intelligent, progressive, planful, thorough, and resourceful; as being alert and well-informed; and as placing a high value on cognitive and intellectual matters.

Psychological-mindedness (Py) - low scorers are defined as apathetic, peaceable, serious, cautious, and unassuming; as being slow and

deliberate in tempo; and as being overly conforming and conventional.

Femininity (Fe) - high scorers are defined as appreciative, patient, helpful, gentle, moderate, persevering, and sincere; as being respectful and accepting of others; and as behaving in a conscientious and sympathetic way (CPI Manual, pp. 12 and 13).

Factor 3 (strong loadings from Ai and Fx, secondary loadings from To, Ie and occasionally from Py) - low scorers are defined as being rigid and stereotyped in thinking, and accepting of authoritarian attitudes.

Hypotheses Regarding Personality Variables

The following hypotheses are set up on a logical basis.

1. There will be a negative correlation between scores on the Social-ability (Sy) scale of the CPI and the Adaptive Child (AC) scale of the PRQ.
2. There will be a positive correlation between scores on the Social Presence (Sp) scale of the CPI and the Natural Child (NC) scale of the PRQ.
3. There will be a negative correlation between scores on the Social-ization (So) scale of the CPI and the Rebellious Child (RC) scale of the PRQ.
4. There will be a negative correlation between scores on the Self-control (Sc) scale of the CPI and the Rebellious Child (RC) scale of the PRQ.
5. There will be a positive correlation between scores on the Achieve-ment via Independence (Ai) scale of the CPI and the Adult (A) scale

of the PRQ.

6. There will be a positive correlation between scores on the Intellectual Efficiency (Ie) scale of the CPI and the Adult (A) scale of the PRQ.
7. There will be a negative correlation between scores on the Psychological-mindedness (Py) scale of the CPI and the Adaptive Child (AC) scale of the PRQ.
8. There will be a positive correlation between scores on the Femininity (Fe) scale of the CPI and the Nurturing Parent (NP) scale of the PRQ.
9. There will be a correlation between scores on Factor 3 of the CPI and the Critical Parent (CP) scale of the PRQ.

Social Desirability

It has long been observed that scores on personality questionnaires appear to be influenced by factors other than the manifest content of the items. The point of view of early test constructors was that content of items was the sole determinant of responses. It was assumed that subjects could report accurately their typical behavior, and also that they would do so in a test-taking situation.

It was soon learned, however, that responses to personality test items could not be taken at face value. Tendencies to respond in a socially desirable manner was thought to constitute a source of error variance. Research was then turned to efforts to identify dissimulators and to correct for these tendencies to dissimulate. The Minnesota Multiphasic Personality Inventory was the first major test to attempt controlling for dispositions to conceal or dissimulate.

Edwards (1957) formally defined one of the major factors in

distortion of test responses as being a social desirability factor. The Edwards Social Desirability Scale was constructed as a measure of subjects responding in a socially desirable manner. However, Edwards drew his items from clinical scales and they are characterized by their pathological content as well as by social desirability. Thus the items are characterized by extreme social desirability scale positions and are statistically deviant. The achievement of high SD scores may simply reflect a low frequency of pathological symptoms and not the need of subjects to present themselves in a favorable light.

Crowne and Marlowe (1960) developed a new SD scale in which "the population from which items were drawn is defined by behaviors which are culturally sanctioned and approved but which are improbable of occurrence (p.350)." Each item was also required to have minimum pathological implications if answered in either the socially desirable or undesirable direction.

A position has been taken by Heilbrun (1962, 1965) in which he concluded that Edwards's initial assumption that SD should function as a response set in personality assessment and, accordingly, as a source of predictive error was incorrect. He concludes that his experimental findings point in the opposite direction and the subjects whose self-descriptions tended to be of a more socially desirable character provided test records that were both more valid and reliable. One of the possible explanations for this is that high SD subjects will respond more favorably to instructions and answer frankly and honestly, if asked to do so.

Jackson and Messick (1969), suggest social desirability may be only

one of many connotative attributes of personality items theoretically related to response variance in self-report inventories. Jackson (1971) stated that the evidence suggests that scales developed by the substantive approach can effectively suppress the role of response style. Orvik (1972) found that the social desirability ratings that are the best predictors are also the most personal and/or most group specific. Thus, the claim by Edwards (1957) that SD can be treated as an item attribute is not only not supported, but was found to be the opposite.

While no one as yet has supplied conclusive evidence to support either position, that because a person responds in a socially desirable way he has or has not given a biased response, it has been decided here to include the Marlowe-Crowne Social Desirability Scale (MCSDS) along with the administration of the first draft of the PRQ in order to estimate the amount of shared variance.

The Marlowe-Crowne Social Desirability Scale

The MCSDS is a paper and pencil test composed of 33 items to be answered True or False by the subject.

All items to be included in this scale had to meet the criterion of cultural sanction and approval as well as to have minimum pathological implications when answered either True or False.

The internal consistency coefficient for undergraduate male and female university students is .88. A test-retest correlation of .89 was obtained on the same population.

The correlation between the MCSDS and the Edwards SDS is .35. Uniformly lower correlations are obtained between the MCSDS and MMPI variables than between the Edwards SDS and these same MMPI variables,

thus supporting their objective to have minimum pathological implications associated with any score.

Summary

In this chapter, TA theory has been briefly reviewed and the problem to which this research is to be directed has been stated. Hypotheses were made regarding the factor structure of the PRQ, and relationships were hypothesized between certain scales on the California Psychological Inventory and the scales on the Personal Response Questionnaire. Social desirability was looked at as being a possible response set and a rationale for the use of the Marlowe-Crowne Social Desirability Scale was included. In the following chapter the steps in the construct validation of the PRQ will be outlined.

CHAPTER III

CONSTRUCT VALIDATION OF THE PERSONAL RESPONSE QUESTIONNAIRE

Introduction

Prior to outlining the steps in the construction process of the PRQ, it is necessary to focus on construct validation theory on which the construction of a test is based. It is the object of this chapter to present a brief theoretical background of construct validity, and then to outline specifically the steps in the development of the PRQ.

Theoretical Background of Construct Validity

In order for data used in research to be meaningful, the instruments used to collect the data must meet the requirements of good tests. The main criteria are the test's reliability and validity. The first major paper in the area of construct validity was that of Cronbach and Meehl (1955) in which they treated construct validity as being one of four types of validation. Their effort was aimed at explaining the concept and elaborating on it's implications in response to the first Technical Recommendations (1954). Loevinger (1957) developed a model that extends construct validity to include all previous kinds of validity, as well as internal consistency. It is the model of Loevinger that will be used in this study.

Cronbach and Meehl (1955) described construct validity as the type of validation involved "whenever no criterion or universe of content is accepted as entirely adequate to define the quality to be measured (p.282)." Thus, construct validation is necessary whenever the trait

under observation cannot be measured directly. They then proceed to place construct validity within the philosophical framework of the nomological net in which emphasis is placed upon the sufficient elaboration of the theory concerning the construct in question. Not only must the construct occur within a nomological net, but it must be related to observable behaviors.

While Cronbach and Meehl dealt at length with theoretical issues involving construct validity, they did not go so far as to detail specific techniques for it's assessment.

Loevinger (1957) attempted to define further the term construct in an attempt to avoid possible problems surrounding previous definitions. She elaborated on a method of construct validation that includes under it content and criterion validation as well as internal consistency.

Loevinger argued that there are three main components to the construct validation of a psychological test. It is necessary to perform these components in a sequential order. These components are: (1) the substantive component - where the construct must be derived from an explicitly formulated, theoretically based definition of a trait. This definition is then translated into a large sample of items which are designed to serve as behavioral representations of the trait. These items are then subjected to the judgments of expert raters. This is what is usually referred to as content validity. (2) the structural component - concern is focused on the internal consistency or homogeneity of the scale as well as it's factor structure. Internal consistency is concerned with reliability, and the factor structure with construct validity. (3) the external component - is concerned with

what most investigators call criterion-related validity and construct validity, and includes non-test behavior, factor patterns, and relations or correlations with other tests.

One of the main differences between Loevinger's model and other models is the difference between empirical and substantive item selection in developing the item pool. Jackson (1971) clarified this difference by referring to Meehl's (1945) manifesto regarding the construction of personality tests where Meehl argued for empirical item selection saying that a person's response to an item is in itself an interesting piece of data whose behavioral correlates must be uncovered empirically. While an item may not appear to have face or content validity, the fact that it discriminates empirically between a criterion group and normals is all that is needed for it to be included in the test. "A corollary of this approach is that items completely lacking in any rationale, or items which might even appear to be opposite from what might be expected from theory, are permitted with this technique (Jackson, 1971, p.231)."

Jackson supported Loevinger's recommendation for substantive item selection. Underlying this position is the belief that the most effective way to measure a trait is to assess the behaviors that are most relevant to the trait. The substantive approach places a large responsibility on the scale developer in that he must be thoroughly aware of both what the trait is and what it is not. The relationship of the item to the criterion is logical in nature. The definition of the trait must be translated into a large sample of items designed to serve as a comprehensive representation of the trait. Jackson argues

that the chances of an item failing when administered to a new sample are greatly reduced by using the substantive method of item selection.

The method of construction to be used in developing the PRQ is that put forward by Loevinger (1957) and supported by Jackson (1971). The following are the steps to be taken in the construct validation of the PRQ.

The Substantive Component in the Construct Validation of the PRQ

A pool of 205 items was developed on the basis of the theoretical and behavioral definitions of the CP, NP, A, AC, RC, and NC given by various TA theorists (Berne, 1961, 1964, 1972; Harris, 1967; James and Jongeward, 1971; Steiner, 1971). These items were then submitted individually to each of five different experts in TA. An expert was defined as a person who has had at least one intensive five-day workshop in TA. Each expert (judge) was then instructed to classify each item on the basis of whether it fell into the CP, NP, A, AC, RC, or NC class of behaviors. Of the initial 205 items, there was one hundred percent agreement on 102 items and eighty percent agreement on 66 items. Of these 168 items, 20 items were chosen as representative of as wide a range of behaviors possible for each ego state. Thus the first draft of the test (called the Ego State Questionnaire) consisted of 120 items with 20 items representing each ego state. These final 120 items consisted of 85 items which had previously been agreed on by one hundred percent of the judges, and 35 items with eighty percent inter-judge agreement. The items were ordered in the test on the basis of a computer print-out of 120 random numbers.

The Structural Component in the Construct Validation of the PRQ

The first draft of the PRQ (then called the Ego State Questionnaire - Appendix I) was administered, along with the Marlowe-Crowne Social Desirability Scale (Appendix II), to 508 undergraduate students registered in Psychology or Educational Psychology courses at the University of Alberta. IBM answer sheets were used and subsequently scored by an optical scoring procedure. Sex was also included as additional information, and the correlations between the PRQ and the MCSDS were analyzed separately for males and females as well as for the total group.

Variables to be analyzed were the consecutive 120 items, with sex to be considered separately. Values assigned to the 120 dichotomous variables were: 'True'=1, 'False'=2. Three data cards were required for each subject.

The factor model adopted for use in this study was Hotelling's (Harmon, 1960) iterative principal factor method. Rotation of the factor matrix to an approximation to orthogonal simple structure was done using Varimax (Kaiser, 1958). This model was chosen as it is an orthogonal rotation, each factor extracted accounts for a maximum amount of the variance, and it produces a maximum KR-20. Seven factors were asked for in this analysis.

A Procrustes rotation (Hurley & Cattell, 1962) was then applied to the Varimax factor matrix. This is used when the researcher has some idea of what the end result should look like and is able to specify a structure. The matrix is then rotated obliquely or "targeted" to it's best fit with the structure. The computer program used was modified to include the large number of variables (120) used in this

study. Previously, the program was able to deal with a maximum of 100 variables. The matrix of 7 factors was then rotated to it's best fit with the 6 factor target. The 6 factor target corresponded to the key of the first draft of the PRQ with each scale of the target corresponding to one of the TA ego states.

A principal components analysis rotated to each of a Varimax, Quartimax and Equamax criterion was then performed on the correlation matrix between primary factors in order to obtain secondary factors.

The External Component in the Construct Validation of the PRQ

The final draft of the PRQ, along with the CPI, was then administered to 139 undergraduate students registered in Psychology courses. The results of the PRQ were again scored by an optical scoring procedure, while the CPI was hand-scored. Sex was included as an additional variable, and the correlations between the PRQ and CPI scales were analyzed separately, as well as together, for males and females, in order to determine whether or not the hypothesized relationships between the two instruments were verified. Due to Factor 3 of the CPI being composed of a number of scales, a multiple correlation procedure was used for this one case.

The internal consistency (KR-20) of each scale of the PRQ was also estimated.

Differences between male and female scores on the scales of the PRQ were also analyzed. This analysis was considered to be important if norms are eventually set up for the PRQ and will indicate whether or not separate norms may be needed.

Summarized Hypotheses

(a) Factors

1. Six first order factors will emerge.
2. Three second order factors will emerge.

(b) Personality Variables

1. Sy will correlate negatively with AC.
2. Sp will correlate positively with NC.
3. So will correlate negatively with RC.
4. Sc will correlate negatively with RC.
5. Ai will correlate positively with A.
6. Ie will correlate positively with A.
7. Py will correlate negatively with AC.
8. Fe will correlate positively with NP.
9. Factor 3 will correlate with CP.

Summary

Construct validity was briefly reviewed historically, and Loevinger's three components in the construct validation of a test - the substantive, structural and external components - were looked at in more detail, as it is Loevinger's model of test development that is to be used in this study. The hypotheses to be tested in the study were then briefly summarized. The results are discussed in the following chapter.

CHAPTER IV

RESULTS

Item Factor Structure of the Personal Response Questionnaire

(a) Hotelling's Iterative Principal Factor Method

Item content of the factors is shown in Table 1, with the items placed in order of their appearance on the first draft of the PRQ, and not in order of the weights of the factor loadings. All items with loadings of .300 or greater were considered to load on a particular factor.

Factor I

Thirteen of the fifteen items loading on this factor were originally keyed as being indicative of Critical Parent behavior. Of the two items that were not CP, one (#74) was AC and the other (#96) was NP.

Factor II

Nine of the items loading on this factor corresponded to items originally keyed as Adaptive Child. Of the remaining items loading on Factor II, one (#61) is NP, one (#13) is A, and the other two (items 43 and 118) are RC.

Factor III

All eleven of the items loading on this factor correspond to items originally keyed as Rebellious Child.

Factor IV

Ten of the items loading on this factor were originally keyed as being indicative of Adult behavior. The one other item (#93) loading

TABLE 1

SEVEN FACTOR VARIMAX SOLUTION

Variable	Item	Factor Loading
Factor I		
3.	It's disgusting the way taxes keep going up to support people on social welfare.	.379
7.	People are not moral enough today.	.574
22.	One way of stopping wrong-doing is to severely punish people who break the law.	.465
28.	What people need today is more discipline.	.675
57.	You just don't get service any more like you used to.	.340
62.	Teenagers would be better off if they listened to and learned from the experiences of older people.	.435
65.	Most people should go to church more often than they do.	.526
74.	I often say to myself, "I don't make the rules, I just follow them."	.316
77.	Honesty is the best policy - never tell a lie.	.336
83.	There are too many unproductive people in the world.	.308
85.	Many people are forgetting that it is only through hard work that they will reach the top.	.451
89.	It disturbs me that people are losing sight of traditional and conservative ways of doing things.	.433
91.	You are judged by the company you keep.	.331
96.	People often need to be encouraged to do things which are for their own good.	.302
113.	It bothers me that there are not enough people today with the courage to stand up for what is right.	.427
Factor II		
8.	I usually try to live up to the expectations of others.	.484

Variable	Item	Factor Loading
13.	I seem to have developed a capacity for independent thinking, as opposed to many who conform to other people's thoughts and ideas.	-.380
15.	I tend to agree rather than argue with other people about concepts of right and wrong, ideas about what to do, plans, programs, systems, procedures, etc.	.495
24.	When people don't see things my way, I really get frustrated but try to hide it.	.389
43.	I tend to argue rather than agree with people about concepts of right and wrong, ideas about what to do, etc.	-.308
51.	I feel uncomfortable when people express negative emotions such as anger, boredom, etc.	.447
61.	I feel most important when I am helping others.	.305
68.	Though I rarely have difficulty carrying out instructions, I need to have people tell me how I am doing.	.338
76.	I am careful not to laugh or talk too loudly.	.389
84.	When in a difficult or tense situation, my stomach churns and my hands sweat.	.300
99.	I don't mind being in groups, but I'd rather someone else be the leader.	.324
106.	I often wonder what "they" will say about things that I do.	.573
118.	When confronted with adversity, I either sulk or withdraw.	.320
Factor III		
10.	I have trouble controlling my temper.	.411
12.	My whole body tenses when someone tells me I have to do something.	.377
20.	I am seen as being a stubborn person.	.460
36.	If I do something that I don't want to do, I usually do it grudgingly.	.334

Variable	Item	Factor Loading
43.	I tend to argue rather than agree with people about concepts of right and wrong, ideas about what to do, etc.	.440
63.	I usually get upset if I don't get my own way.	.439
98.	Some people say that I have a chip on my shoulder.	.494
101.	When people tell me that I should do something, I have a tendency to do just the opposite.	.437
104.	I have difficulty getting along well with most leaders.	.472
110.	My first reaction when told to do something is to say "no."	.453
118.	When confronted with adversity, I either sulk or withdraw.	.327
Factor IV		
9.	I like to leave as few things to chance as possible.	.328
19.	I tend to look at "all the facts" and plan carefully before starting some action.	.629
52.	I see myself as being a person with good foresight.	.451
59.	I make a real effort to seek out ideas, opinions and attitudes different from my own.	.324
69.	I find that I am continually evaluating my thoughts, feelings and behaviors.	.327
93.	I really enjoy designing and/or building things.	.310
95.	I think that I am more observant than most people.	.369
97.	It is important for me to analyze all situations thoroughly before I act.	.581
115.	I usually estimate the risks of making a decision before actually making it.	.611
116.	While I have clear, strong convictions and voice them, I respond to alternative ideas by evaluating them and changing my mind if they appear sound.	.305
117.	If something seems that it may become a problem, I try to think of alternative solutions before the problem becomes too big.	.445

Variable	Item	Factor Loading
Factor V		
16.	I usually get my own way.	.346
17.	I would enjoy working in the area of helping others.	-.342
39.	I think children should be taught to help other people as much as possible.	-.343
40.	My philosophy is never to let anyone get in a position where they can tell me what to do.	.436
58.	It is important to know how to "get around people."	.402
75.	I am good at manipulating people to get my own way.	.492
79.	There are some races that are definitely inferior to ours.	.395
82.	When I'm happy, I don't care what is happening around me.	.320
120.	I get things done with a minimum of effort.	.334
Factor VI		
21.	I find myself being open and spontaneous with other people.	.386
23.	Others seem to turn to me for support when things go wrong.	.356
32.	I like showing people how to do things.	.409
35.	I often find myself in situations where I am the leader and other group members depend on me for guidance.	.509
47.	I enjoy making decisions for the good of other people.	.440
55.	I feel uncomfortable being in the limelight.	-.389
56.	I like expressing myself in a creative fashion.	.375
59.	I make a real effort to seek out ideas, opinions and attitudes different from my own.	.337
71.	When I see people that are weak and unassuming, I try to make sure that others don't take advantage of them.	.366
99.	I don't mind being in groups, but I'd rather someone else be the leader.	-.407

Variable	Item	Factor Loading
Factor VII		
27.	When wandering through a store, I find that I like to touch and feel many of the store's goods.	.345
48.	I usually act the way I feel, rather than controlling my emotions.	.544
49.	While I experience and express a full and enjoyable range of emotions, I seem to be able to control them more than most people.	-.369
54.	I usually go to see people I know who are in the hospital.	.309
64.	When I am happy, everyone seems to know it.	.381
72.	I frequently ask people for help in solving problems.	.353
73.	There are appropriate times for expressing emotion and I have no difficulty doing so.	.335
107.	Rather than suppress my emotions, I am able to show them according to the demands of the situation.	.484
108.	When I feel angry I let people know.	.474
111.	Although I enjoy life as much as others do, I'm able to maintain a sense of alert detachment when others seem to become emotional.	-.349

on Factor IV keys as NC.

Factors V, VI and VII

Each of these three factors are fairly miscellaneous in nature.

Factor V is composed of the following items loading on their respective ego state categories - one CP (#79), two NP (items 17 and 39), one A (#75), two AC (items 16 and 58), one RC (#40), and one NC (#82).

Factor VI is composed of the following - five NP (items 23, 32, 35, 47, and 71), one A (#59), two AC (items 55 and 99), and two NC (items 21 and 56).

Factor VII is composed of - one NP (#54), four A (items 49, 73, 107, and 111), one AC (#72), and four NC (items 27, 48, 64, and 108).

(b) Procrustes Rotation - Target Matrix

The matrix resulting from the Varimax rotation was then targeted to a best fit using as a target the items on the first draft of the PRQ and the direction of their keying. The seven factor Varimax solution was fitted then, to a six factor target, each of the six factors in the target corresponding to one of CP, NP, A, AC, RC, or NC of the PRQ.

Item content of the factors is shown in Table 2, with the items placed in order of their appearance on the first draft of the PRQ, and not in order of the weights of the factor loadings. A factor loading of .300 was chosen as the cut-off point for inclusion in a factor.

Factor I

Twelve of the thirteen items loading significantly on this factor corresponded to keying on the Critical Parent scale. The one odd item keyed on AC (#74).

TABLE 2

SIX FACTOR PROCRUSTES SOLUTION

Variable	Item	Factor Loading
Factor I		
3.	It's disgusting the way taxes keep going up to support people on social welfare.	.452
7.	People are not moral enough today.	.532
22.	One way of stopping wrong-doing is to severely punish people who break the law.	.489
28.	What people need today is more discipline.	.680
57.	You just don't get service any more like you used to.	.384
62.	Teenagers would be better off if they listened to and learned from the experiences of older people.	.405
65.	Most people should go to church more often than they do.	.463
74.	I often say to myself, "I don't make the rules, I just follow them."	.323
83.	There are too many unproductive people in the world.	.353
85.	Many people are forgetting that it is only through hard work that they will reach the top.	.456
89.	It disturbs me that people are losing sight of traditional and conservative ways of doing things.	.387
91.	You are judged by the company you keep.	.315
113.	It bothers me that there are not enough people today with the courage to stand up for what is right.	.392
Factor II		
17.	I would enjoy working in the area of helping others.	.384
26.	I usually come to the aid of friends who are in difficulty.	.347
32.	I like showing people how to do things.	.349
35.	I often find myself in situations where I am the leader and other group members depend on me for guidance.	.329

Variable	Item	Factor Loading
38.	Many people need to be protected from society.	.340
39.	I think children should be taught to help other people as much as possible.	.371
47.	I enjoy making decisions for the good of other people.	.423
56.	I like expressing myself in a creative fashion.	.334
59.	I make a real effort to seek out ideas, opinions and attitudes different from my own.	.322
61.	I feel most important when I am helping others.	.390
67.	I find that I want to comfort people who are having bad times.	.388
71.	When I see people that are weak and unassuming, I try to make sure that others don't take advantage of them.	.524
119.	I have a tendency to support the underdog.	.384
Factor III		
9.	I like to leave as few things to chance as possible.	.305
13.	I seem to have developed a capacity for independent thinking, as opposed to many who conform to other people's thoughts and ideas.	.340
19.	I tend to look at "all the facts" and plan carefully before starting some action.	.626
52.	I see myself as being a person with good foresight.	.503
59.	I make a real effort to seek out ideas, opinions and attitudes different from my own.	.329
93.	I really enjoy designing and/or building things.	.334
95.	I think that I am more observant than most people.	.430
97.	It is important for me to analyze all situations thoroughly before I act.	.599
115.	I usually estimate the risks of making a decision before actually making it.	.617
117.	If something seems that it may become a problem, I try to	

Variable	Item	Factor Loading
	think of alternative solutions before the problem becomes too big.	.416
Factor IV		
8.	I usually try to live up to the expectations of others.	.458
13.	I seem to have developed a capacity for independent thinking as opposed to many who conform to other people's thoughts and ideas.	-.374
15.	I tend to agree rather than argue with other people about concepts of right and wrong, ideas about what to do, plans, programs, systems, procedures, etc.	.516
18.	I find that being really nice to people helps get me things that I want.	.384
24.	When people don't see things my way, I really get frustrated but try to hide it.	.384
43.	I tend to argue rather than agree with people about concepts of right and wrong, ideas about what to do, etc.	-.410
51.	I feel uncomfortable when people express negative emotions such as anger, boredom, etc.	.425
58.	It is important to know how to "get around people."	.357
72.	I frequently ask people for help in solving problems.	.308
76.	I am careful not to laugh or talk too loudly.	.401
82.	When I'm happy, I don't care what is happening around me.	.338
84.	When in a difficult or tense situation, my stomach churns and my hands sweat.	.307
90.	I feel comfortable following a strong leader.	.309
106.	I often wonder what "they" will say about things that I do.	.531
Factor V		
10.	I have trouble controlling my temper.	.428
11.	It takes a lot to convince me to do something when I don't want to do it.	.301

Variable	Items	Factor Loading
12.	My whole body tenses when someone tells me I have to do something.	.373
20.	I am seen as being a stubborn person.	.475
36.	If I do something that I don't want to do, I usually do it grudgingly.	.398
43.	I tend to argue rather than agree with people about concepts of right and wrong, ideas about what to do, etc.	.473
53.	I dislike other people telling me what I "ought" or "should" do.	.336
63.	I usually get upset if I don't get my own way.	.477
87.	In my relationships with other people I tend to notice their faults and weaknesses more than their strengths.	.326
98.	Some people say that I have a chip on my shoulder.	.480
101.	When people tell me that I should do something, I have a tendency to do just the opposite.	.437
104.	I have difficulty getting along well with most leaders.	.465
110.	My first reaction when told to do something is to say "no."	.487
118.	When confronted with adversity, I either sulk or withdraw.	.307
Factor VI		
10.	I have trouble controlling my temper.	.332
21.	I find myself being open and spontaneous with other people.	.400
27.	When wandering through a store, I find that I like to touch and feel many of the store's goods.	.399
32.	I like showing people how to do things.	.311
48.	I usually act the way I feel, rather than controlling my emotions.	.580
49.	While I experience and express a full and enjoyable range of emotions, I seem to be able to control them more than most people.	-.358
54.	I usually go to see people I know who are in the hospital.	.330

Variable	Item	Factor Loading
64.	When I am happy, everyone seems to know it.	.470
72.	I frequently ask people for help in solving problems.	.429
73.	There are appropriate times for expressing emotion and I have no difficulty doing so.	.402
81.	I often find myself using expressions like "Wow!", "Gosh!", etc.	.371
86.	I enjoy doing "stupid" things just for the fun of it.	.328
100.	I have a tendency to talk and laugh loudly in my interactions with others.	.317
107.	Rather than suppress my emotions, I am able to show them according to the demands of the situation.	.511
108.	When I feel angry I let people know.	.431
111.	Although I enjoy life as much as others do, I'm able to maintain a sense of alert detachment when others seem to become emotional.	-.343

Factor II

Eleven of the thirteen items loading on this factor were Nurturing Parent items. Of the two items that were not NP, one was A (#59), and the other was NC (#56).

Factor III

Nine Adult items loaded highly on this factor, as did one NC item (#93).

Factor IV

Eleven items loaded highly on Adaptive Child. One item loaded on A (#13), another loaded on RC (#43), and a third loaded on NC (#82).

Factor V

Thirteen items loaded highly on this factor corresponding to Rebellious Child. One item loaded highly on CP (#87).

Factor VI

This factor is the least clear, but has eight items loading highly corresponding to Natural Child. Other items loading on this factor included - two NP (items 32 and 54), four A (items 49, 73, 107, and 111), one AC (#72), and one RC (#10).

Final Draft of the Personal Response Questionnaire

A final draft of the PRQ (Appendix III) was based on the results of the Procrustes rotation. Criterion for inclusion of items was twofold - (1) items had to load significantly on a factor, and (2) the items had to agree with the original substantively based direction of keying. Items which loaded on more than one factor were discarded, unless an item loaded positively on one factor and negatively on another, in which case the positive loading was included. All negative loadings were not

included.

Ten items were included in the scale corresponding to first order factor II (NP). Item numbers 56 and 59 were not included as they were keyed NC and A, respectively. Item number 32 was not included as it also loaded on Factor VI.

The scale corresponding to first order factor III (A) was composed of eight items meeting the above criteria. One item (#93) keyed NC was not included. Item number 59 was not included as it also loaded on Factor II.

For first order factor IV (AC), ten items were included in the scale. Item numbers 12, 43 and 82 keyed A, RC and NC, respectively, were discarded. Item number 72 was not included as it also loaded on Factor VI.

The scale representing first order factor V (RC) consists of twelve items. One item (#87) was keyed CP and, therefore, not included in this scale. Item number 10 was not included as it also loaded on Factor VI.

The last scale corresponds to first order factor VI (NC) and consists of eight items. Eight others (items 10, 32, 49, 54, 72, 73, 107, and 111) were not included due to the direction of keying. These items, in order, were keyed RC, NP, A, NP, AC, A, A, and A.

Thus the final draft of the PRQ consists of six scales, each corresponding to one of the TA ego states, and is composed of a total of 60 items.

Internal Consistency of the Six PRQ Scales

Internal consistency for each scale, after the factor analyses and on the same group of subjects, as estimated by the KR-20 formula, is shown in Table 3. The coefficients of internal consistency range from

.47 to .72.

TABLE 3

INTERNAL CONSISTENCY OF THE PERSONAL RESPONSE QUESTIONNAIRE, N=508

	PRQ Subscales					
	CP	NP	A	AC	RC	NC
KR-20	.72	.52	.65	.59	.63	.47

Factor Analysis of the Primary Factors

A factor analysis of the six primary factors was done on the same 508 subjects, but using only the items included on the final form of the PRQ. The matrix was rotated to each of a Quartimax, Varimax, and Equamax solution. Each rotation yielded virtually identical results which are shown in Tables 4, 5, and 6.

Six factors resulted, each of which correspond to one of the six primary factors.

TABLE 4

QUARTIMAX SOLUTION OF PRIMARY FACTORS

Primary Factors	Second Order Factors					
	1	2	3	4	5	6
I (CP)	.064	.055	.028	.142	.073	.983
II (NP)	.097	.006	.077	.064	.988	.072
III (A)	.993	-.032	-.030	.003	.095	.062
IV (AC)	.003	.054	.008	.986	.064	.141
V (RC)	-.032	.994	.074	.053	.006	.053
VI (NC)	-.029	.074	.994	.008	.075	.027

TABLE 5

VARIMAX SOLUTION OF PRIMARY FACTORS

Primary Factors	Second Order Factors 1	2	3	4	5	6
I (CP)	.064	.055	.028	.142	.073	.983
II (NP)	.097	.006	.077	.064	.988	.072
III (A)	.993	-.032	-.029	.003	.095	.062
IV (AC)	.003	.054	.008	.986	.064	.141
V (RC)	-.032	.994	.074	.053	.006	.053
VI (NC)	-.029	.074	.994	.008	.075	.027

TABLE 6

EQUAMAX SOLUTION OF PRIMARY FACTORS

Primary Factors	Second Order Factors 1	2	3	4	5	6
I (CP)	.064	.028	.055	.142	.073	.983
II (NP)	.097	.077	.006	.064	.988	.072
III (A)	.993	-.030	-.032	.003	.095	.063
IV (AC)	.003	.008	.054	.987	.064	.141
V (RC)	-.032	.074	.994	.053	.006	.053
VI (NC)	-.029	.994	.074	.008	.075	.027

Results of Hypotheses Regarding Factor Structure of the PRQ

Hypothesis 1 - Confirmed. Six first order factors did appear, each one corresponding to the previous theoretically defined ego states of CP, NP, A, AC, RC, and NC.

Hypothesis 2 - Not confirmed. Six factors emerged, each one being identical to one of the first order factors.

Relationships Between PRQ Scales and the MCSDS

Table 7 shows average age of the sample, the means and standard deviations for the six sub-scales of the PRQ and the MCSDS for total subjects, as well as for males and females separately.

TABLE 7

MEANS, STANDARD DEVIATIONS AND AVERAGE SUBJECT AGE

	Age	CP	NP	A	AC	RC	NC	MCSDS
Males N=162								
Mean	21.27	6.06	7.72	5.57	5.24	4.17	4.01	14.53
S.D.		2.71	1.78	1.87	2.13	2.50	1.63	5.31
Females N=346								
Mean	20.75	5.86	7.47	5.12	5.28	3.68	4.44	15.69
S.D.		2.90	1.74	2.03	2.26	2.18	1.78	5.19
Total N=508								
Mean	20.91	5.93	7.55	5.27	5.27	3.84	4.31	15.32
S.D.		2.84	1.76	2.00	2.22	2.30	1.74	5.26

Tables 8, 9, and 10 show the relationships among the six scales of the PRQ as well as the MCSDS for males, females, and total sample, respectively. It would appear that the scales of the PRQ are independent of one another.

TABLE 8

CORRELATION MATRIX OF THE SIX PERSONAL RESPONSE QUESTIONNAIRE SCALES AND THE MARLOWE-CROWNE SOCIAL DESIRABILITY SCALE - MALES

	CP	NP	A	AC	RC	NC	MCSDS
CP							
NP	.163*						
A	.116	.212**					
AC	.302***	.048	.068				
RC	.147	-.069	-.105	.192**			
NC	.133	.150	-.004	.017	.243**		
MCSDS	.091	.267***	.305***	-.166*	-.321***	-.012	

*p<.05
**p<.01
***p<.001

TABLE 9

CORRELATION MATRIX OF THE SIX PERSONAL RESPONSE QUESTIONNAIRE SCALES AND THE MARLOWE-CROWNE SOCIAL DESIRABILITY SCALE - FEMALES

	CP	NP	A	AC	RC	NC	MCSDS
CP							
NP	.157**						
A	.132**	.175***					
AC	.281***	.179***	.000				
RC	.096	.063	-.059	.078			
NC	.040	.165**	-.055	.032	.126*		
MCSDS	.011	.149**	.269***	-.179***	-.398***	-.119*	

*p<.05
**p<.01
***p<.001

TABLE 10

CORRELATION MATRIX OF THE SIX PERSONAL RESPONSE QUESTIONNAIRE SCALES AND THE MARLOWE-CROWNE SOCIAL DESIRABILITY SCALE - TOTAL SAMPLE

	CP	NP	A	AC	RC	NC	MCSDS
CP							
NP	.160***						
A	.130**	.192***					
AC	.286***	.137**	.019				
RC	.115**	.022	-.062	.114**			
NC	.063	.151***	-.052	.028	.150***		
MCSDS	.032	.180***	.266***	-.173***	-.376***	-.074	

*p<.05
**p<.01
***p<.001

It should be noted that social desirability correlates negatively with AC and RC in both males and females, and also negatively with NC for females. The MCSDS correlates positively with NP and A for both males and females, and there is no significant correlation of social desirability with CP.

Results of Hypotheses Regarding the CPI and the PRQ

Although hypotheses were formally worded for males and females as a total group, results were analyzed, for clarification, for males and females separately, as well as for the total group, and the results of the administration of the CPI and the PRQ to 139 undergraduates is reported here.

Table 11 shows the correlations between the scales of the CPI and PRQ for males. Table 14 gives the multiple correlations between various scales on Factor 3 of the CPI and the CP of the PRQ. Results of hypotheses are as follows for males:

TABLE 11

CORRELATIONS BETWEEN THE PERSONAL RESPONSE QUESTIONNAIRE AND THE CALIFORNIA PSYCHOLOGICAL INVENTORY FOR MALES, N=60

CPI	PRQ					
	CP	NP	A	AC	RC	NC
Dominance (Do)	.107	.392*	.224	-.078	-.150	.161
Capacity for Status (Cs)	-.148	.074	.036	-.196	-.407**	.034
Sociability (Sy)	-.055	.231	.281	-.180	-.351*	.194
Social Presence (Sp)	-.256	-.011	.054	-.056	-.395*	.077
Self-Acceptance (Sa)	.046	.181	.373*	-.061	-.178	.274
Sense of Well-Being (Wb)	-.145	.035	.233	-.407**	-.493**	-.185
Responsibility (Re)	.023	.071	-.032	-.133	-.326*	.030
Socialization (So)	-.100	.149	.237	.015	-.420**	-.103
Self-Control (Sc)	-.253	-.094	.048	-.359*	-.370*	-.296
Tolerance (To)	-.226	.102	.062	-.331*	-.402**	-.079
Good Impression (Gi)	-.273	.130	.093	-.299	-.441**	-.217
Communality (Cm)	.323*	.192	.416**	-.175	-.225	.023
Achievement via Conformance (Ac)	-.108	.026	.255	-.266	-.382*	-.144
Achievement via Independence (Ai)	-.259	-.174	.052	-.116	-.277	-.116

	PRQ					
CPI	CP	NP	A	AC	RC	NC
Intellectual Efficiency (Ie)	-.228	-.059	.086	-.275	-.395*	.066
Psychological-Mindedness (Py)	-.225	.026	-.123	-.235	-.274	-.086
Flexibility (Fx)	-.393*	-.001	-.325*	.058	-.165	.070
Femininity (Fe)	-.083	-.036	-.234	.170	-.037	.035

*p<.01
**p<.001

Hypothesis 1 - Not confirmed. The correlation between Sociability on the CPI and AC on the PRQ was in the predicted negative direction, but not significant.

Hypothesis 2 - Not confirmed. There was no relationship between Social Presence on the CPI and NC on the PRQ.

Hypothesis 3 - Confirmed. There was a significant negative relationship between Socialization on the CPI and RC on the PRQ.

Hypothesis 4 - Confirmed. There was a significant negative relationship between Self-control on the CPI and RC on the PRQ.

Hypothesis 5 - Not confirmed. There was no relationship between Achievement via Independence on the CPI and A on the PRQ.

Hypothesis 6 - Not confirmed. There was no relationship between Intellectual Efficiency on the CPI and A on the PRQ.

Hypothesis 7 - Not confirmed. The correlation between Psychological-mindedness on the CPI and AC on the PRQ was in the predicted negative direction, but not significant.

Hypothesis 8 - Not confirmed. There was no relationship between Femininity on the CPI and NP on the PRQ.

Hypothesis 9 - Not confirmed. There was no relationship between Factor 3

of the CPI and CP on the PRQ.

Table 12 shows the correlations between the scales of the CPI and PRQ for females. Table 14 includes the multiple correlations for Factor 3 of the CPI and CP on the PRQ. Results of the hypotheses are as follows for females:

Hypothesis 1 - Confirmed. There was a significant negative correlation between Sociability on the CPI and AC on the PRQ.

Hypothesis 2 - Confirmed. There was a significant positive correlation between Social Presence on the CPI and NC on the PRQ.

Hypothesis 3 - Confirmed. There was a significant negative correlation between Socialization on the CPI and RC on the PRQ.

Hypothesis 4 - Confirmed. There was a significant negative correlation between Self-control on the CPI and RC on the PRQ.

Hypothesis 5 - Not confirmed. There was no correlation between Achievement via Independence on the CPI and A on the PRQ.

Hypothesis 6 - Not confirmed. The correlation between Intellectual Efficiency on the CPI and A on the PRQ was in the predicted positive direction, but not significant.

Hypothesis 7 - Confirmed. There was a significant negative correlation between Psychological-mindedness on the CPI and AC on the PRQ.

Hypothesis 8 - Not confirmed. The correlation between Femininity on the CPI and NP on the PRQ was in the predicted positive direction, but not significant.

Hypothesis 9 - Confirmed. The multiple correlation of Factor 3 on the CPI with CP on the PRQ was significant when Ai, Fx, To, Ie, and Py

TABLE 12

CORRELATIONS BETWEEN THE PERSONAL RESPONSE QUESTIONNAIRE AND THE CALIFORNIA PSYCHOLOGICAL INVENTORY FOR FEMALES, N=79

	PRQ					
CPI	CP	NP	A	AC	RC	NC
Do	.013	.163	.199	-.419**	-.029	.149
Cs	-.174	-.026	.022	-.447**	-.214	.161
Sy	-.097	.014	.166	-.389**	-.234	.338*
Sp	-.288*	-.177	-.081	-.433**	-.186	.289*
Sa	-.092	.071	.226	-.313*	-.002	.371**
Wb	-.224	-.233	.044	-.380**	-.426**	-.174
Re	.207	.155	.158	.064	-.393**	-.274*
So	.257	-.017	.100	.158	-.358**	-.214
Sc	.135	.043	.156	-.039	-.363**	-.399**
To	-.258	-.195	-.018	-.486**	-.309*	-.086
Gi	.132	.177	.187	-.220	-.208	-.092
Cm	.133	.115	.051	.129	-.277*	-.175
Ac	.150	.047	.281*	-.096	-.371**	-.288*
Ai	-.277*	-.049	.050	-.432**	-.295*	-.087
Ie	-.068	-.149	.115	-.367**	-.282*	-.006
Py	-.291*	-.174	.031	-.468**	-.117	-.035
Fx	-.502**	-.071	-.344*	-.189	-.020	.161
Fe	.264	.201	.098	.271	-.140	.088

*p <.01
**p <.001

were used as the predictors.

Table 13 shows the correlations between the scales of the CPI and PRQ for the total group. Table 14 includes the multiple correlations for Factor 3 of the CPI and CP on the PRQ. Results of the hypotheses are as follows for the total group:

Hypothesis 1 - Confirmed. There was a significant negative relationship between Sociability on the CPI and AC on the PRQ.

Hypothesis 2 - Confirmed. There was a significant positive relationship between Social Presence on the CPI and NC on the PRQ.

Hypothesis 3 - Confirmed. There was a significant negative relationship between Socialization on the CPI and RC on the PRQ.

Hypothesis 4 - Confirmed. There was a significant negative relationship between Self-control on the CPI and RC on the PRQ.

Hypothesis 5 - Not confirmed. There was no relationship between Achievement via Independence on the CPI and A on the PRQ.

Hypothesis 6 - Not confirmed. There was no relationship between Intellectual Efficiency on the CPI and A on the PRQ.

Hypothesis 7 - Confirmed. There was a significant negative relationship between Psychological-mindedness on the CPI and AC on the PRQ.

Hypothesis 8 - Not confirmed. There was no relationship between Femininity on the CPI and NP on the PRQ.

Hypothesis 9 - Confirmed. The multiple correlation of Factor 3 on the CPI with CP on the PRQ was significant both when Ai, Fx, To and Ie, and Ai, Fx, To, Ie and Py were used as predictors. However, the latter combination of predictors was statistically stronger.

TABLE 13

CORRELATIONS BETWEEN THE PERSONAL RESPONSE QUESTIONNAIRE AND THE CALIFORNIA PSYCHOLOGICAL INVENTORY FOR TOTAL SAMPLE, N=139

	PRQ					
CPI	CP	NP	A	AC	RC	NC
Do	.068	.278**	.223*	-.263*	-.077	.133
Cs	-.169	.016	.019	-.352**	-.283**	.114
Sy	-.074	.118	.217*	-.300**	-.278**	.264*
Sp	-.273**	-.098	-.026	-.276**	-.266*	.194+
Sa	-.020	.129	.301**	-.197*	-.073	.306**
Wb	-.212*	-.113	.098	-.396**	-.445**	-.150
Re	.097	.102	.041	-.035	-.354**	-.097
So	.087	.049	.123	.087	-.373**	-.130
Sc	-.065	-.037	.062	-.187	-.350**	-.292**
To	-.263*	-.052	-.009	-.418**	-.338**	-.051
Gi	-.058	.143	.114	-.260*	-.294**	-.117
Cm	.191	.149	.205	-.026	-.243*	-.050
Ac	.028	.032	.250*	-.174	-.370**	-.202
Ai	-.293**	-.120	.014	-.298**	-.277**	-.061
Ie	-.136	-.111	.091	-.334**	-.322**	.035
Py	-.267**	-.081	-.041	-.374**	-.176	-.050
Fx	-.477**	-.048	-.360**	-.098	-.073	.154
Fe	-.042	.019	-.157	.108	-.062	.169

+p<.02
*p<.01
**p<.001

TABLE 14

MULTIPLE CORRELATIONS (R^2) BETWEEN VARIOUS SCALES ON FACTOR 3 OF THE CALIFORNIA PSYCHOLOGICAL INVENTORY AND CRITICAL PARENT ON THE PERSONAL RESPONSE QUESTIONNAIRE

	Factor 3				
PRQ	Ai,Fx	Ai,Fx To,Ie	Ai,Fx, To,Ie,Py	F	P
Males - CP	.18			12.43	N.S.
CP		.19		6.51	N.S.
CP			.19	3.15	N.S.
Females - CP	.27			27.94	N.S.
CP		.30		16.64	N.S.
CP			.32	8.68	.025
Total - CP	.25			45.01	N.S.
CP		.27		24.59	.05
CP			.27	12.56	.025

Internal Consistency of the PRQ

New estimates of internal consistency (KR-20) were computed on the second sample of N=139 and are shown in Table 15. The coefficients of internal consistency range from .47 to .69.

TABLE 15

INTERNAL CONSISTENCY OF THE PERSONAL RESPONSE QUESTIONNAIRE, N=139

	PRQ Scales					
	CP	NP	A	AC	RC	NC
KR-20	.69	.50	.47	.47	.63	.61

Summary of Findings

The findings of this research give solid support to the PRQ as being a usable psychometric instrument.

The first evidence for the viability of the PRQ comes from the high

inter-judge agreement on the items used in the test.

The fact that six factors emerged, each one corresponding to a TA ego state, is also highly supportive evidence of the PRQ being a viable test, particularly after six factors were initially hypothesized. While the second factor hypothesis did not turn out as predicted, this seems to be largely due to incorrect assumptions by the author. Six factors, highly independent of one another, resulted, each one corresponding to one of the first order factors and lending solid support to the validity of the PRQ.

Other evidence for the validity of the PRQ comes from the correlation between the PRQ and CPI scales. Results of the analysis for the total group lend support to the CP, AC, RC, and NC scales as six of the nine hypotheses were confirmed. The predictions involving the NP and A scales were not confirmed.

More support is evidenced when the results are analyzed separately for males and females. Six of the nine hypotheses were supported for females. While neither of the predictions involving the A scale were confirmed, one was in the predicted direction. The hypothesis involving the NP scale (although not significant) was in the predicted direction. All other predictions involving the CP, AC, RC and NC scales were confirmed for females.

The results of the analysis for males lends support only to the RC scale as it predictably correlated negatively with So and Sc. Some support was given to the AC and CP scales as the relationships between them and the CPI scales were in the predicted direction but not significant. None of the other hypotheses were confirmed for males.

Sex Differences on the PRQ

Differences between means for males and females on each TA ego state were also examined and are reported in Table 16. The assumption of homogeneity of variance was met. Males scored significantly higher on CP and A than did females, while females scored significantly higher on NC than did males. Significant differences were not found on NP, AC, and RC.

TABLE 16

DIFFERENCES BETWEEN MALES AND FEMALES ON EGO STATES

	Males $\bar{x}$	Females $\bar{x}$	Males S.D.	Females S.D.	d.f.	t	p
CP	6.53	5.62	2.41	2.83	137	2.00	.05
NP	7.62	7.43	1.94	1.65	137	.61	.54
A	5.98	5.43	1.61	1.64	137	1.99	.05
AC	5.20	4.94	1.92	2.08	137	.76	.45
RC	4.15	4.18	1.94	2.34	137	- .07	.94
NC	3.47	4.16	2.04	1.94	137	-2.06	.04

Other Findings

A post hoc analysis of data reveals other supporting correlations (Tables 12, 13 and 14) between PRQ and CPI scales.

Flexibility on the CPI correlated negatively with Critical Parent on the PRQ for males, females and total group.

Flexibility on the CPI correlated negatively with Adult on the PRQ for males, females and total group.

Sense of Well-Being and Tolerance correlated negatively for all groups with Adaptive Child on the PRQ.

Sense of Well-Being, Responsibility, Socialization, Self-Control, Tolerance, Achievement via Conformance and Intellectual Efficiency correlated negatively with Rebellious Child on the PRQ for all groups.

CHAPTER V

DISCUSSION

The purpose of this study was to design and to demonstrate the construct validity of a psychological instrument to measure the Transactional Analysis concept of ego state. Evidence for the substantive, structural and external components of construct validity were obtained resulting in a viable Personal Response Questionnaire.

Of the two hypotheses regarding the factor structure of the PRQ, one was confirmed. Six first order factors did emerge, each one corresponding to one of the TA ego states of Critical Parent, Nurturing Parent, Adult, Adaptive Child, Rebellious Child and Natural Child. The Natural Child appeared to be the weakest scale as a number of other items also loaded on this scale. However,it does seem to be a useful scale upon analysis of internal consistency and external validation measures. The other five scales emerged as clear factors. The results of the factor analyses lend a great deal of support to what is often referred to as construct validity, but in this research is referred to as the structural component of construct validity.

The results of the second order factor analysis revealed six strong factors, each corresponding to one of the six first order factors. This indicates that each of the PRQ scales is highly independent from the others. It should be noted that independence of scales is a desirable attribute of personality tests of this kind. It would appear that the reasons for non-confirmation of the hypothesis regarding second

order factors was due to incorrect assumptions by the writer. A person who scores high on Critical Parent would not necessarily score high on Nurturing Parent, in which case these two scales would not cluster together in a second order factor. Likewise, a person who scored high on one of the Child ego states would not necessarily score high on the other two. The fact that the scales are independent from each other lends strength to the test and does not detract from TA theory. The placement of the ego states in PAC diagrams must be seen as strictly arbitrary without an empirical basis, even though there is theoretical validity in terms of how the ego states are developed. It should be noted, though, that this study was not oriented to discovering the origin of the ego states but strictly to the identification and measurement of them.

As regards the hypotheses made between the CPI and the PRQ, the first hypothesis was not confirmed for males, but was confirmed for females and the total group. It appears that Sociability behaviour, as defined by the CPI, and Adaptive Child behavior, as defined by the PRQ, are negatively related for females. The reason it was confirmed for the total group may be because of the larger number of females (N = 79) than males (N = 60) in the sample, as well as the fact that a larger N allows a smaller correlation coefficient to reach statistical significance.

Hypothesis two was not confirmed for males but was confirmed for females and the total group. There is a positive relationship between Social Presence on the CPI and Natural Child on the PRQ.

The third and fourth hypotheses were confirmed for males, females and total group. There was a significant negative relationship between

Socialization and Self-Control on the CPI and Rebellious Child and the PRQ.

Hypotheses five and six were not supported for males, females or total group, although the sixth hypothesis was in the predicted direction for females. Thus, no significant relationship was discovered between Achievement via Independence and Intellectual Efficiency on the CPI and Adult on the PRQ.

The seventh hypothesis was in the predicted direction for males but was not significant. It did reach the significance level for females and total group, so there was a negative relationship between Psychological-mindedness on the CPI and Adaptive Child on the PRQ.

Hypothesis eight was not confirmed for males, females or total group, although it was in the predicted positive direction for females. Thus, there was no significant relationship between Femininity on the CPI and Nurturing Parent on the PRQ.

Hypothesis nine was confirmed for females and total group, but not for males. The correlation of Factor 3 on the CPI and Critical Parent on the PRQ was significant for females and total group, when Achievement via Independence, Flexibility, Tolerance, Intellectual Efficiency, and Psychological-mindedness were used as predictor variables. The CPI scales of Achievement via Independence, Flexibility, Tolerance and Intellectual Efficiency were also significant as predictor variables for the total group.

One of the implications would seem to be that there are differences in the predominance of particular ego states between men and women, and that in future research, separate hypotheses should be made for men and women, looking more closely at their roles in this society.

One of the most unexpected findings involved the lack of relationship in either sex group between Achievement via Independence and Intellectual efficiency on the CPI and Adult on the PRQ. For males, Achievement via

Independence correlated negatively with Critical Parent and Rebellious Child. For females, Achievement via Independence correlated negatively with Critical Parent, Adaptive Child and Rebellious Child. Males and females obtained significant negative correlations between Intellectual Efficiency on the CPI and Adaptive Child and Rebellious Child on the PRQ. Thus it would seem that people scoring high on Achievement via Independence and Intellectual Efficiency do not consistently exhibit more Adult kinds of behaviors.

The overall results of the hypotheses between the CPI and PRQ lend considerable support to the external component of validity for the PRQ but do raise some questions as to the reasons for the lack of significant results for males. The most obvious reason would be that there may be differences between males and females in predominance of particular ego states. An analysis of the differences on means between males and females revealed that males tend to score significantly higher on Critical Parent and Adult, but lower on Natural Child than do females. These differences suggest that future research with the PRQ must take into account sex differences in a way that separate hypotheses should be put forward for males and females. Significant correlations that resulted between CPI and PRQ scales, that were not predicted suggest directions that future research could take if the same instruments were used.

These differences are interesting in light of the male and female roles in our society. Men are brought up to be more critical, dominant and disciplinarian, which in TA terms is Critical Parent behavior, while these traits are discouraged in women. Men are seen as being more reasonable, logical and "keeping a cool head in times of stress" which in TA terms is Adult behavior, while women are not encouraged in

these behaviors but are seen as being much more emotional in nature, which would be evidenced by Natural Child behaviors. Since men tend to integrate at a legalistic level and women at a social conformity level in our society (Kohlberg, 1971), it might also be expected that women should score higher on Adaptive Child than men. This was not the result of this study, but could prove to be an interesting area for future investigation.

The differences between male-female ego states found in this study differ from the ones identified by Hogie Wyckoff (in Steiner, 1974). She claims that females have a stronger Nurturing Parent and Little Professor (Adaptive Child) than do males. Males have a stronger Adult than do females, and both males and females have a strong Pig Parent (Critical Parent) and a weak Natural Child. Wyckoff talks about these as being fact in our society, but the only one of her "hypotheses" that is supported by this study is the stronger Adult ego state in males. The limitations of the sample in this study being restricted to undergraduate University students may have some bearing on the outcome and this can only be checked out by further study. However, Wyckoff claims that the sex roles are determined by society, and this writer sees no reason to assume that University students are immune from what Wyckoff calls sex-role scripting. In any event, this appears to be an extremely interesting area for further study.

The internal consistency of the PRQ is within acceptable limits, but could be improved by lengthening the scales. A way of doing this would be to develop a pool of items in addition to the ones currently on the PRQ and follow the same procedures outlined in this study. It

must be remembered, however, that the actual internal consistency of the PRQ may be somewhat higher, as the KR-20 coefficient of equivalence provides a figure that is a lower bound (Cronbach, 1967).

The results of this research indicate that the PRQ is ready for use in its present form and generally meets the goal of the researcher as set out in this study, namely, that an instrument to measure TA ego states should be developed and able to be used in research projects on TA.

This study gives strong evidence for the viability of ego states as defined by TA theory. The strongest evidence results from the six factors emerging from the factor analysis, each factor corresponding to a TA ego state. Additional support for the viability of the concept of ego state comes from the correlations with various CPI scales. The primary implication of this for TA theory is, probably, that the construct of ego state is a particularly useful one in the analysis of human behavior, and stands up under rigorous statistical experimentation. More extensive work needs to be done on the PRQ adding to the external component of validity. In this particular area, care must be taken in selecting other validating instruments.

One method of adding validation information is to investigate group differences. If, on the basis of our understanding of a construct, we would expect two groups to differ, this can be tested empirically. Failure to find a difference would suggest that (1) the test does not measure that particular construct, (2) the theory that generated the hypothesis was incorrect, or (3) the proper experimental design was not used to adequately test the hypothesis (Cronbach & Meehl, 1955).

Another method of adding validation information is through

correlation of PRQ constructs with other tests measuring the same or similar constructs. However, if the expected correlation does not result, there is no way of knowing whether the fault lies with one of the tests or the theory. This is where factor analysis can be helpful in dividing a correlation matrix into more meaningful parts.

Further investigation of the internal structure of the PRQ could be beneficial. High item intercorrelations on each scale lend support to the validity of the instrument. As mentioned previously, longer scales would increase the probability of having scales with higher internal consistency.

Studies of change over time, with respect to a specific test, relate to the stability of test scores. While Loevinger (1957) would appear not to do this (she suggests that separate norms are needed for the second testing), a test-retest coefficient could be useful. The most powerful evidence in studying change over time would be the retest after an experimental treatment, also with the use of a control group.

While the above suggestions for research are more general in nature, more specific ones can be made.

In psychotherapy, the PRQ could be used as a measure of change in the client. Research could be done to determine what proportions of each ego state are most indicative of "the healthy personality", and the PRQ, along with other criteria might be used to assess varying degrees of progress in psychotherapy. It might be used in looking at the process of a particular individual in psychotherapy.

Another important line of research involves communication patterns in the family. An acquaintance of the author is currently using the PRQ

in an investigation of this kind. Questions are to be asked such as, if parents have a predominance of certain ego states, what effects does this have in the child rearing process, and what combinations of ego states are most likely to result in the children?

The use of the PRQ could also have far-reaching implications in the field of vocational counselling. Egograms of particular jobs or professions could be developed by a mass testing program to discover which combination of ego states are most desirable and useful for specific vocational areas. The PRQ could then be used as a screening device for job applicants in terms of fitting the applicant's egogram to the ideal egogram for a particular job, and using this as assistance in decision making.

In conclusion, while validation of a psychometric instrument is a never-ending process, the PRQ is ready for use in its present form. While it must be used cautiously at this point, it is a test that has a wide range of uses. It is hoped by the author, that this study is the beginning of a long process of validation and refinement of the Personal Response Questionnaire.

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APPENDIX I

EGO STATE QUESTIONNAIRE

Directions: Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is True or False as it pertains to you personally, and mark it on the answer sheet provided.

1. Compared to most people I daydream quite a lot.
2. There is only one right way of looking at most situations.
3. It's disgusting the way taxes keep going up to support people on social welfare.
4. I am usually in agreement with most public protest movements.
5. When I catch other people in delicate situations, I pretend not to notice so as not to embarass them.
6. If I throw a party, it is up to me to see that everyone has a good time.
7. People are not moral enough today.
8. I usually try to live up to the expectations of others.
9. I like to leave as few things to chance as possible.
10. I have trouble controlling my temper.
11. It takes a lot to convince me to do something when I don't want to do it.
12. My whole body tenses when someone tells me I have to do something.
13. I seem to have developed a capacity for independent thinking, as opposed to many who conform to other people's thoughts and ideas.
14. I attend more courses, seminars, lectures, etc. than most people I know.
15. I tend to agree rather than argue with other people about concepts of right and wrong, ideas about what to do, plans, programs, systems, procedures, etc.
16. I usually get my own way.
17. I would enjoy working in the area of helping others.
18. I find that being really nice to people helps get me things that I want.
19. I tend to look at "all the facts" and plan carefully before starting some action.
20. I am seen as being a stubborn person.
21. I find myself being open and spontaneous with other people.
22. One way of stopping wrong-doing is to severely punish people who break the law.
23. Others seem to turn to me for support when things go wrong.
24. When people don't see things my way, I really get frustrated but try to hide it.
25. If someone in authority makes a decision, I'll help carry it out even though it may impose a hardship on some people.

26. I usually come to the aid of friends who are in difficulty.
27. When wandering through a store, I find that I like to touch and feel many of the store's goods.
28. What people need today is more discipline.
29. I like playing games where I don't have to think and can relax and let go.
30. I seem to work best when no one is around to "bug" me.
31. When I see a close friend in trouble, I often wish it were me instead of him/her.
32. I like showing people how to do things.
33. About the only way real change occurs is when a strong, tough-minded person takes charge in a situation and makes it go.
34. I prefer solving problems rather than being involved in bargaining or negotiating kinds of situations.
35. I often find myself in situations where I am the leader and other group members depend on me for guidance.
36. If I do something that I don't want to do, I usually do it grudgingly.
37. I tend to rely on intuition when I make many of my decisions.
38. Many people need to be protected from society.
39. I think children should be taught to help other people as much as possible.
40. My philosophy is never to let anyone get in a position where they can tell me what to do.
41. I like to watch cartoons.
42. It makes me happy when I please others.
43. I tend to argue rather than agree with people about concepts of right and wrong, ideas about what to do, etc.
44. I get a lot of fun out of life.
45. It isn't wishful thinking to assume that people really are capable of sustained self-direction and control.
46. Some of the best times for me are when I can discover and explore new places or things.
47. I enjoy making decisions for the good of other people.
48. I usually act the way I feel, rather than controlling my emotions.
49. While I experience and express a full and enjoyable range of emotions, I seem to be able to control them more than most people.
50. I am inclined to give people many chances to do something right.
51. I feel uncomfortable when people express negative emotions such as anger, boredom, etc.
52. I see myself as being a person with good foresight.
53. I dislike other people telling me what I "ought" or "should" do.
54. I usually go to see people I know who are in the hospital.
55. I feel uncomfortable being in the limelight.
56. I like expressing myself in a creative fashion.
57. You just don't get service any more like you used to.
58. It is important to know how to "get around people".
59. I make a real effort to seek out ideas, opinions, and attitudes different from my own.
60. I distrust policemen more than I respect them.
61. I feel most important when I am helping others.

62. Teenagers would be better off if they listened to and learned from the experiences of older people.
63. I usually get upset if I don't get my own way.
64. When I am happy, everyone seems to know it.
65. Most people should go to church more often than they do.
66. Only people with the proper qualifications should be allowed to hold positions of authority.
67. I find that I want to comfort people who are having bad times.
68. Though I rarely have difficulty carrying out instructions, I need to have people tell me how I am doing.
69. I find that I am continually evaluating my thoughts, feelings and behaviors.
70. In a discussion, I usually take the opposite point of view whether I believe it or not.
71. When I see people that are weak and unassuming, I try to make sure that others don't take advantage of them.
72. I frequently ask people for help in solving problems.
73. There are appropriate times for expressing emotion and I have no difficulty doing so.
74. I often say to myself, "I don't make the rules, I just follow them".
75. I am good at manipulating people to get my own way.
76. I am careful not to laugh or talk too loudly.
77. Honesty is the best policy - never tell a lie.
78. I really love the smell of a fresh spring morning.
79. There are some races that are definitely inferior to ours.
80. I feel that our social welfare system is too hard on many people.
81. I often find myself using expressions like "Wow!", "Gosh!", etc.
82. When I'm happy, I don't care what is happening around me.
83. There are too many unproductive people in the world.
84. When in a difficult or tense situation, my stomach churns and my hands sweat.
85. Many people are forgetting that it is only through hard work that they will reach the top.
86. I enjoy doing "stupid" things just for the fun of it.
87. In my relationships with other people I tend to notice their faults and weaknesses more than their strengths.
88. Persons who don't challenge tried and accepted ways of thinking and doing upset me.
89. It disturbs me that people are losing sight of traditional and conservative ways of doing things.
90. I feel comfortable following a strong leader.
91. You are judged by the company you keep.
92. I have little difficulty integrating new ideas with old ones.
93. I really enjoy designing and/or building things.
94. The mass media has a tendency to favor minority groups more than they should.
95. I think that I am more observant than most people.
96. People often need to be encouraged to do things which are for their own good.
97. It is important for me to analyze all situations thoroughly before I act.

98. Some people say that I have a chip on my shoulder.
99. I don't mind being in groups, but I'd rather someone else be the leader.
100. I have a tendency to talk and laugh loudly in my interactions with others.
101. When people tell me that I should do something, I have a tendency to do just the opposite.
102. I am usually able to make a good impression on other people.
103. When I get into trouble, it is usually somebody elses' fault.
104. I have difficulty getting along well with most leaders.
105. I like participating in sports just for the fun of it.
106. I often wonder what "they" will say about things that I do.
107. Rather than suppress my emotions, I am able to show them according to the demands of the situation.
108. When I feel angry I let people know.
109. I like to take warm, relaxing baths.
110. My first reaction when told to do something is to say "no."
111. Although I enjoy life as much as others do, I'm able to maintain a sense of alert detachment when others seem to become emotional.
112. I usually feel sorry for criminals who are caught.
113. It bothers me that there are not enough people today with the courage to stand up for what is right.
114. No matter how hard you try, it is impossible to change human nature.
115. I usually estimate the risks of making a decision before actually making it.
116. While I have clear, strong convictions and voice them, I respond to alternative ideas by evaluating them and changing my mind if they appear sound.
117. If something seems that it may become a problem, I try to think of alternative solutions before the problem becomes too big.
118. When confronted with adversity, I either sulk or withdraw.
119. I have a tendency to support the underdog.
120. I get things done with a minimum of effort.

APPENDIX II

MARLOWE-CROWNE SOCIAL DESIRABILITY SCALE

PERSONAL REACTION INVENTORY

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is true or false as it pertains to you personally.

1. Before voting I thoroughly investigate the qualifications of all the candidates.
2. I never hesitate to go out of my way to help someone in trouble.
3. It is sometimes hard for me to go on with my work if I am not encouraged.
4. I have never intensely disliked anyone.
5. On occasion I have had doubts about my ability to succeed in life.
6. I sometimes feel resentful when I don't get my way.
7. I am always careful about manner of dress.
8. My table manners at home are as good as when I eat out in a restaurant.
9. If I could get into a movie without paying and be sure I was not seen I would probably do it.
10. On a few occasions, I have given up doing something because I thought too little of my ability.
11. I like to gossip at times.
12. There have been times when I felt like rebelling against people in authority even though I knew they were right.
13. No matter who I'm talking to, I'm always a good listener.
14. I can remember "playing sick" to get out of something.
15. There have been occasions when I took advantage of someone.
16. I'm always willing to admit it when I make a mistake.
17. I always try to practice what I preach.
18. I don't find it particularly difficult to get along with loud mouthed, obnoxious people.
19. I sometimes try to get even rather than forgive and forget.
20. When I don't know something I don't at all mind admitting it.
21. I am always courteous, even to people who are disagreeable.
22. At times I have really insisted on having things my own way.
23. There have been occasions when I felt like smashing things.
24. I would never think of letting someone else be punished for my wrongdoings.
25. I never resent being asked to return a favor.
26. I have never been irked when people expressed ideas very different from my own.
27. I never make a long trip without checking the safety of my car.
28. There have been times when I was quite jealous of the good fortune of others.
29. I have almost never felt the urge to tell someone off.

30. I am sometimes irritated by people who ask favors of me.
31. I have never felt that I was punished without cause.
32. I sometimes think when people have a misfortune they only got what they deserved.
33. I have never deliberately said something that hurt someone's feelings.

APPENDIX III

PERSONAL RESPONSE QUESTIONNAIRE

Directions: Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is True or False as it pertains to you personally, and mark it on the answer sheet provided.

1. When in a difficult or tense situation, my stomach churns and my hands sweat.
2. I usually get upset if I don't get my own way.
3. I like to leave as few things to chance as possible.
4. Many people are forgetting that it is only through hard work that they will reach the top.
5. I am seen as being a stubborn person.
6. I seem to have developed a capacity for independent thinking, as opposed to many who conform to other people's thoughts and ideas.
7. When people tell me that I should do something, I have a tendency to do just the opposite.
8. I usually try to live up to the expectations of others.
9. It bothers me that there are not enough people today with the courage to stand up for what is right.
10. I usually estimate the risks of making a decision before actually making it.
11. When I am happy, everyone seems to know it.
12. I think that I am more observant than most people.
13. When I see people that are weak and unassuming, I try to make sure that others don't take advantage of them.
14. I feel comfortable following a strong leader.
15. People are not moral enough today.
16. I often wonder what "they" will say about things that I do.
17. There are too many unproductive people in the world.
18. Most people should go to church more often than they do.
19. If I do something that I don't want to do, I usually do it grudgingly.
20. It is important for me to analyze all situations thoroughly before I act.
21. My first reaction when told to do something is to say "no."
22. I often find myself in situations where I am the leader and other group members depend on me for guidance.
23. It takes a lot to convince me to do something when I don't want to do it.
24. I find that I want to comfort people who are having bad times.
25. You are judged by the company you keep.
26. When wandering through a store, I find that I like to touch and feel many of the store's goods.
27. What people need today is more discipline.
28. I usually act the way I feel, rather than controlling my emotions.
29. I have a tendency to talk and laugh loudly in my interactions with others.

30. When people don't see things my way, I really get frustrated but try to hide it.
31. I have difficulty getting along well with most leaders.
32. One way of stopping wrong-doing is to severely punish people who break the law.
33. I often find myself using expressions like "Wow!", "Gosh!", etc.
34. When confronted with adversity, I either sulk or withdraw.
35. It is important to know how to "get around people".
36. I feel uncomfortable when people express negative emotions such as anger, boredom, etc.
37. I am careful not to laugh or talk too loudly.
38. If something seems that it may become a problem, I try to think of alternative solutions.
39. I dislike other people telling me what I "ought" or "should" do.
40. I feel most important when I am helping others.
41. My whole body tenses when someone tells me I have to do something.
42. I find myself being open and spontaneous with other people.
43. I find that being really nice to people helps get me things that I want.
44. You just don't get service any more like you used to.
45. I usually come to the aid of friends who are in difficulty.
46. I tend to agree rather than argue with other people about concepts of right and wrong, ideas about what to do, plans, programs, systems, procedures, etc.
47. I would enjoy working in the area of helping others.
48. I tend to argue rather than agree with people about concepts of right and wrong, ideas about what to do, etc.
49. When I feel angry I let people know.
50. Some people say that I have a chip on my shoulder.
51. I see myself as being a person with good foresight.
52. I enjoy doing "stupid" things just for the fun of it.
53. It's disgusting the way taxes keep going up to support people on social welfare.
54. I tend to look at "all the facts" and plan carefully before starting some action.
55. I have a tendency to support the underdog.
56. I think children should be taught to help other people as much as possible.
57. I enjoy making decisions for the good of other people.
58. It disturbs me that people are losing sight of traditional and conservative ways of doing things.
59. Many people need to be protected from society.
60. Teenagers would be better off if they listened to and learned from the experiences of older people.

APPENDIX IV

KEY TO PERSONAL RESPONSE QUESTIONNAIRE

Items are answered True or False and all are keyed True. Items are keyed to the correct ego states as follows:

Critical Parent - 4, 9, 15, 17, 18, 25, 27, 32, 44, 53, 58, 60

Nurturing Parent - 13, 22, 24, 40, 45, 47, 55, 56, 57, 59

Adult - 3, 6, 10, 12, 20, 38, 51, 54

Adaptive Child - 1, 8, 14, 16, 30, 35, 36, 37, 43, 46

Rebellious Child - 2, 5, 7, 19, 21, 23, 31, 34, 39, 41, 48, 50

Natural Child - 11, 26, 28, 29, 33, 42, 49, 52